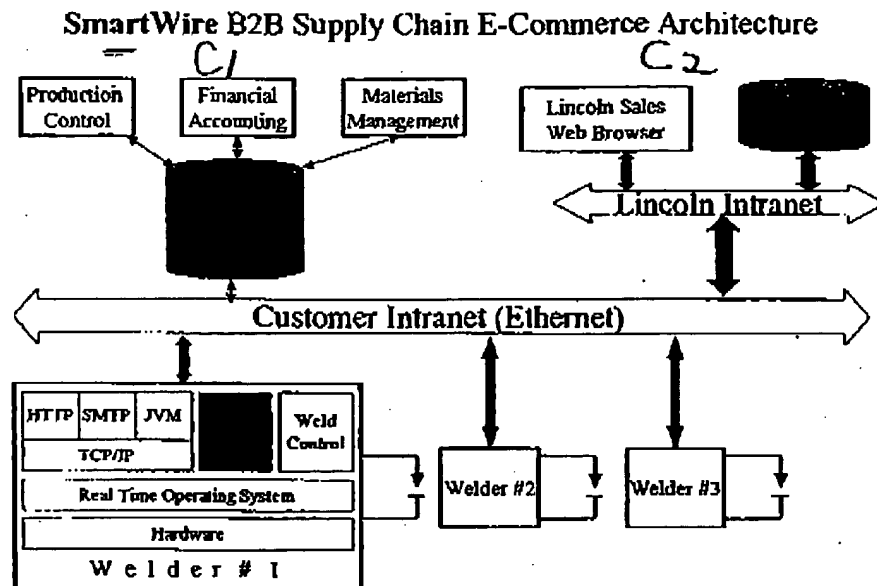


## EXHIBIT A.



SmartWire (TM) - Chris Hsu

Chris Hsu

Title

Supply Chain E-Commerce Enabled by Point of Consumption Monitor

Chris Hsu - George Blinkship  
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## Summary of the Invention

This invention relates to a business method enabled by Point of Consumption Monitor, and electronic commerce facilitated by supply chain extranet between welding products manufacturer, consumer, and distributor.

Lincoln Welder #1 contains a "consumable monitor" which keeps track of consumable usage and the amount left, at the point of consumption (POC). Each Lincoln welding system provides connectivity to a customer's Enterprise databases. As the consumable is used in production, work in process wire inventory is debited. With pre-determined reorder trigger level, and at the discretion of a customer's supply management, an electronic order can be routed via Extranet to Lincoln's enterprise planning resource database (SAP). This order transaction can be monitored and controlled by a customer's procurement/supply management department and Lincoln's Sales department, and optionally by a distributor. The electronic order is processed by the SAP customer database, order database, finished goods inventory database and pricing database and an order confirmation invoice, lead time and delivery is automatically generated and sent to the customer's Supply Management (optionally to distribution center), depending on the availability of inventory including back-orders. Optionally, the consumable usage information can be used along

with the order fill rate to predict and optimize the re-order point for inventory reduction.

Optionally, the accounting department of a customer can use this connectivity to

- post periodically inventory valuation and cost of goods sold to the general ledger accounts;
- perform a more accurate and expedient "physical count" as required by auditors;
- calculate inventory turnover rate;
- perform what-if analysis on LIFO and FIFO scenarios to realize maximum tax savings.

Optionally, the manufacturing department of a customer can use this connectivity as an accurate consumable demand rate measurement device to lower inventory and boost service level on various production control policies, such as Kanban, Minimal Blocking, Basestock, CONWIP and any hybrid method.

From in-service data mining, statistics can be generated on how our equipment and consumable are being used, which are useful for Lincoln Marketing to accurately map products in the Boston Consulting growth-share matrix, and to identify products as Problem Child, Star, Cash Cow and Dog. Market trending information can be generated for strategic planning. Statistics can also be generated on the dynamics on the rate of our consumable being used, which can produce more accurate sales forecast and form a foundation for corporate business planning, including finance, manufacturing, global supply management, human resource, etc. Pro forma financial statements driven from sales revenues forecast can be used to optimize capital budgeting and refine profitability analysis, including cost of goods, labor expenses, capital expenditures, depreciation, taxes, and cash flows. Supply Management can use the information to plan for raw material global sourcing and budgeting. R&D can focus its effort on developing products and processes that bring in the most revenue, or on rapidly growing industry sectors that of strategic importance. Statistics can also be generated on the failure rate and components that contribute to the failure, so that effort can be placed more effectively to reduce warranty cost. R&D can also use the information to predict stage of products in their life-cycles, to recognize new opportunities and to provide solutions, and to respond to new demands and applications more quickly and effectively.

Guaranteed Cost Reduction can be more effectively implemented with the aid of network technology. A combined equipment and consumable SourceOne service contract can be offered in lieu of traditional independent product sales. This type of contract is analogous to the sales strategy common in telecommunication industry where free cell phones are offered as part of a mobile phone service contract, and in PC industry where large discounts are offered as part of Internet service contract. These service contracts of total welding solution can be enforced and realized by networking technology.

This Supply Chain E-commerce business method is trademarked as Smart Wire, and is a win-win proposition for both our customers and Lincoln. Customers win because

- Increase liquidity by de-capitalization of capital assets
- JIT optimization for low inventory and high service level (fill rate)
- Gained Quality Control tools
- Gained Productivity tools
- Effective welding applications support and customer service and training from Lincoln

Lincoln wins because

- Enhanced business synergy by leveraging process & equipment technology on wire sales; and protect us from wire market share erosion from leveraged strength in process and equipment;
- Reduced Business Risk from more stable revenues and net income in a cyclical industrial manufacturing sector; less affected by economic conditions and seasonal fluctuation in demand thus more stable revenues both quarterly and year-to-year;

- More accurate sales revenue forecast for business planning and pro forma financial statements including EPS projection;
- Builds Brand Equity and Customer Loyalty by direct link to end customers
- Leverage on Distributors by reducing their influence on customers;
- Bargaining chip in negotiating on merger and joint venture;
- Regional demand analysis to assist in making plant build-up and shutdown decisions

To avoid alienating distributors, the new sales channels should be opened and presented to customers and distributors as cost reduction and efficiency booster measures, realized in inventory, distribution, transaction execution, logistics, etc. and additional value in productivity and quality gains from process and procedure optimization, and incentives such as volume pricing. The desired outcome is a pull market which demands such service offerings that result in the proclaimed benefits.

Chris Hsu  
Lincoln Electric  
10/17/2000

**Possible Claims of a new business model enabled by Point of Consumption Monitor -**

1. Network of production equipments to a server that controls a local inventory "store" in the vicinity of a production line;
2. Connectivity of welding equipment or an welding consumable inventory server that oversees welding consumable to an enterprise planning resource (EPR) database servicing the production requirements;
3. Connectivity of equipment, or inventory server to a warehouse information system managed by manufacturer or a distributor;
4. Connectivity of equipment, or inventory server to a manufacturer's EPR database, such as SAP;
5. Facilitates electronic business transactions from manufacturer and its customers;
6. Real time and continuous monitor of product usage dynamics and history;
7. Real time and continuous monitor of Work in Process Inventory;
8. Optimized and automated inventory reordering;
9. Accurate demand forecasting;
10. Enforcement of usage-based licenses on machine, process, technology, product, method, procedure, etc. Patented processes or technologies can recover the royalty charges, which may be waived when certain purchasing criteria are met.
11. Means of invoicing based on length of welds, length of arc on time, number of parts, number of "good quality"/passed welds, instead of weight of wire traditional business method;
12. Reduction of billing cycles;
13. Means of physical count for internal and external auditing purposes;
14. Automated production control;
15. Automated financial accounting;
16. Integration of manufacturer's ERP and that of its customers via Intranet including EDI;
17. Continuous feedback loop of supply/demand network;
18. Enforcement and administration of Lincoln's Guaranteed Cost Reduction program;
19. Management and administration of vender owned inventory located at customers' facility, where transfer of ownership takes place at point of production / consumption, along with automated invoicing from manufacturer; and entries to on general ledger accounts of the customer such as accounts payable;
20. Customer benefits from
  - Increased liquidity by de-capitalization
  - Phase 1 - low inventory and high service level
  - Phase 2 - Dis-owned inventory - low working capital

- Continuous inventory data that feeds ERP modules
  - Quality control tools
  - Productivity tools
  - Effective application support and service from manufacturer
21. Manufacturer benefits from
- Enhanced business synergy
    - Leverage process & equipment technology on wire sales
    - Protect us from wire market share erosion
  - Reduced business risk
    - More stable revenues and net income
    - Less affected by economic cycles
    - More accurate sales forecast
  - Builds brand equity and loyalty
    - Direct link to end customers
    - Reduced distributor dependency and influence
22. Distributor benefits from
- Better order management
  - Inventory optimization in distribution channels and warehouses
  - Better forecasting, tighter delivery schedule
  - Better customer service from manufacturer